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FY 1995

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National Park Service
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FOREWORD

This bulletin reports findings of a survey of all primary wood-using mills in Kansas in 1993 and details the industry's size and composition, its use of roundwood, and its generation and disposition of wood residues. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, forest resource management, forest industry development, and forest research.

Special thanks are given to primary wood-using firms that responded to the survey and to Kansas State and Extension Forestry, Kansas State University, for canvassing the respondents. Their cooperation is greatly appreciated.

In this bulletin, all volumes are reported in product-specific standard units and/or cubic feet. When necessary, volumes reported by mills in nonstandard units were converted to standard units using regional conversion factors. Reported trends and changes in the primary wood-using industry in Kansas are based on comparisons with previous surveys of the State's primary wood-using industry conducted in 1980 and 1964. Row and column data of tables may not sum due to rounding, but data in each table cell are accurately displayed.

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Kansas Timber Industry—An Assessment of Timber Product Output and Use, 1993

Ronald L. Hackett and John K. Strickler

HIGHLIGHTS

PRIMARY WOOD-USING INDUSTRY

- A contributing factor to the lower harvest of industrial roundwood products in 1993 may have been the frequent rainfall and flooding during part of the year that created unfavorable logging conditions and made it difficult for sawmills in the eastern half of Kansas to maintain log inventories.

- The number of active primary wood-using mills dropped from 59 in 1980 to 36 in 1993. Most of the mills in 1993 processed less than 1 million board feet annually (table 1 and fig. 1).

- In 1993, all the primary wood-using mills in Kansas processed nearly 2.2 million cubic feet of roundwood into lumber and other products (table 2).

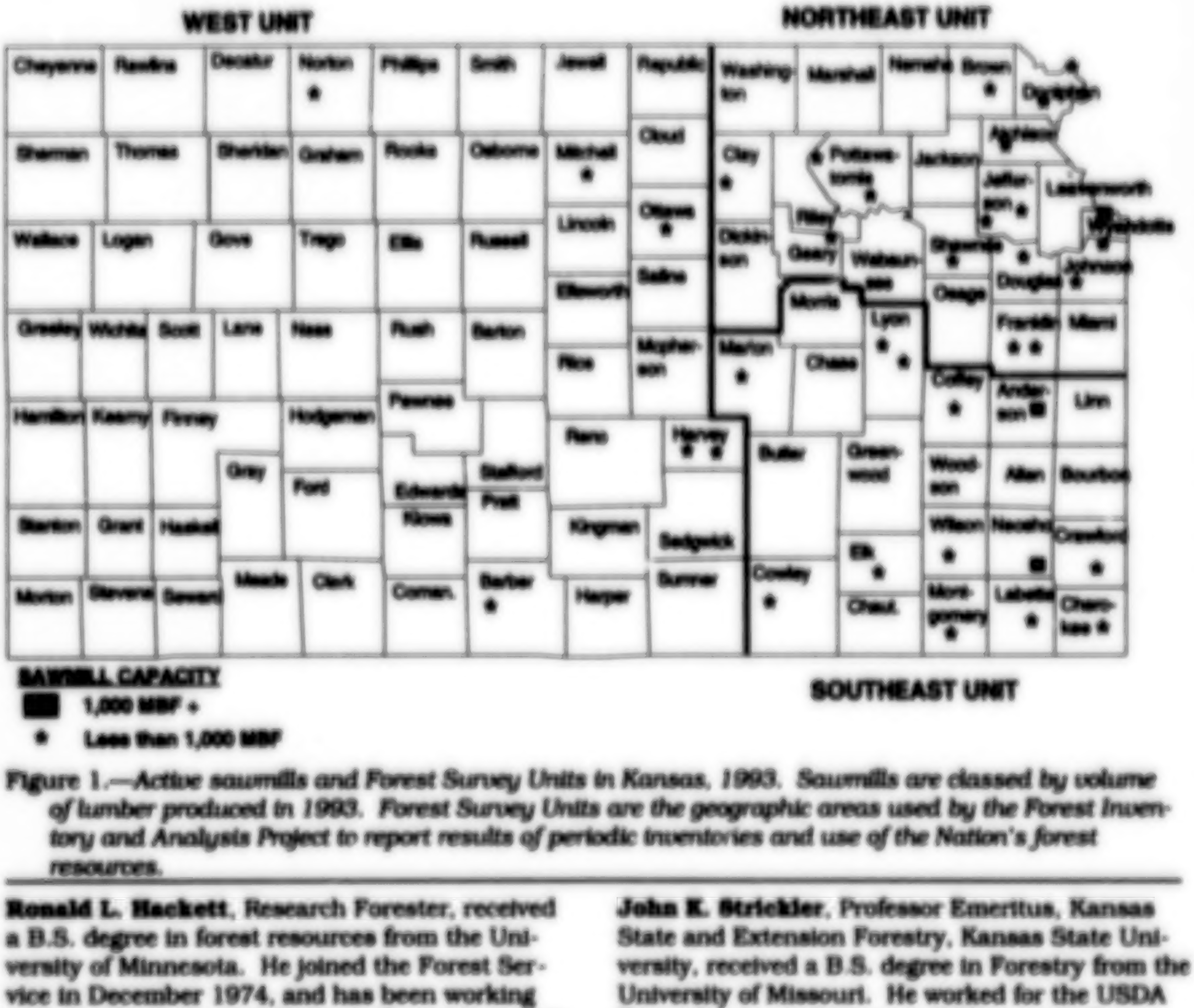

Figure 1.—Active sawmills and Forest Survey Units in Kansas, 1993. Sawmills are classed by volume of lumber produced in 1993. Forest Survey Units are the geographic areas used by the Forest Inventory and Analysis Project to report results of periodic inventories and use of the Nation's forest resources.

Ronald L. Hackett, Research Forester, received a B.S. degree in forest resources from the University of Minnesota. He joined the Forest Service in December 1974, and has been working with the North Central Station's Forest Inventory and Analysis Unit since.

John K. Strickler, Professor Emeritus, Kansas State and Extension Forestry, Kansas State University, received a B.S. degree in Forestry from the University of Missouri. He worked for the USDA Forest Service in Arizona and Missouri before joining Kansas State and Extension Forestry in February 1961. He retired in October 1995.

- More than 85 percent of the roundwood processed was cut from Kansas's forest lands. Small amounts of various species of roundwood, mainly black walnut, were imported from neighboring States.

INDUSTRIAL ROUNDWOOD PRODUCTION

- In 1993, more than 2.2 million cubic feet of industrial roundwood products were cut from Kansas's forest lands, two-thirds less than in 1980 and nearly half the level of 1964 (table 3 and fig. 2).

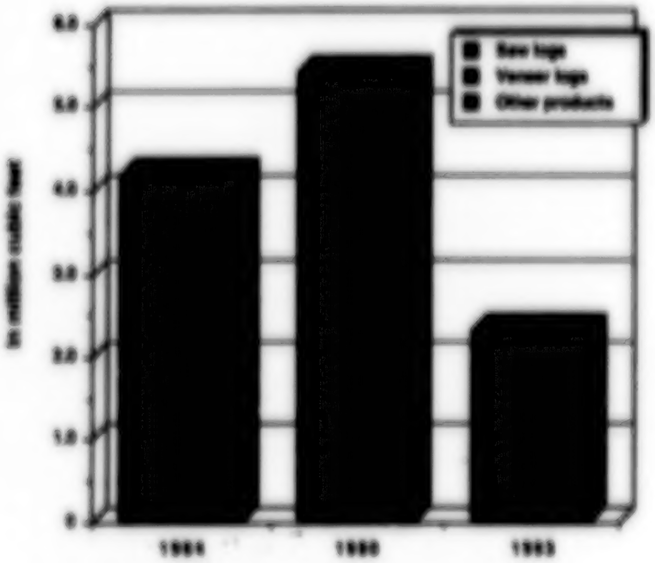

Figure 2.—*Industrial roundwood production by product, Kansas, 1964-1993.*

- Saw logs continued to be the main form of industrial roundwood harvested from Kansas' forest. The only other roundwood products cut in 1993 were small volumes of veneer logs and other products mainly from black walnut, cottonwood, and oak.

- In 1980, about 53 percent of the industrial roundwood production came from the Southeast Unit of the State. In 1993, the Southeast Unit provided 69 percent of the industrial roundwood, but less than half the amount harvested in 1980.

- Saw-log production was nearly 12.5 million board feet in 1993, a drop of 60 percent from 1980. Black walnut and cottonwood accounted for most of the decrease in harvest in 1993. Other important species cut for saw logs were white oak, hackberry, red oak, ash, and soft maple (table 4 and fig. 3).

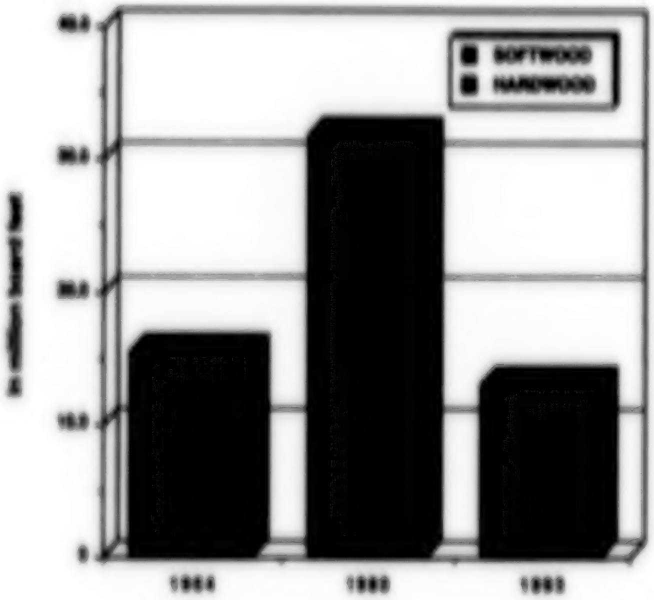

Figure 3.—*Saw-log production by species group, Kansas, 1964-1993.*

- More than 87 percent of the saw-log production was processed in Kansas. Of the saw log production in the State, nearly 2 million board feet were exported, primarily to Missouri and Iowa. The Southeast Unit led in production with 9 million board feet. Black walnut and cottonwood were the major species cut for saw logs in the State.

- Counties each producing more than 1 million board feet of saw logs were Wilson, Neosho, and Franklin. These counties furnished nearly 30 percent of the Kansas saw logs harvested in 1993 (table 5).

- Kansas sawmills received 12.7 million board feet of logs in 1993. Missouri supplied 1.1 million board feet; small amounts were provided by Iowa, Nebraska, and Oklahoma. More than 80 percent of the imported volume was black walnut logs (table 6).

- Veneer-log production in Kansas accounted for 937 thousand board feet, an increase of nearly 75 percent from 1980. Black walnut and white oak accounted for most of the increase in veneer-log production in 1993. Black walnut accounted for nearly 65 percent of the total veneer-log production (table 7 and fig. 4).

- Counties each producing more than 100 thousand board feet of veneer logs were Neosho and Wilson. These two counties furnished one-fourth of the State's veneer-log harvest.

- More than 95 percent of the veneer logs harvested in Kansas in 1993 were exported overseas, and the remaining were shipped to Missouri. Black walnut and white oak were the main species exported from Kansas (table 8).

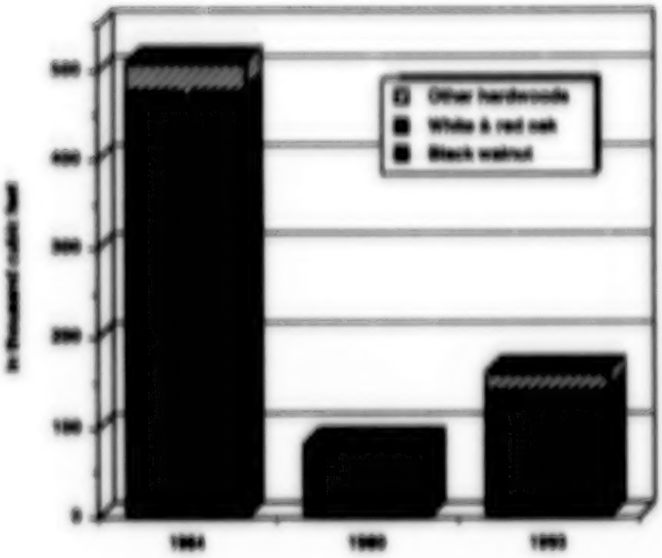

Figure 4.—*Veneer-log production by species group, Kansas, 1964-1993.*

TIMBER REMOVALS FOR INDUSTRIAL ROUNDWOOD

- In the harvesting of industrial roundwood in 1993, 3.5 million cubic feet of timber was cut. Only 37 percent or more than 1.3 million cubic feet was left in the woods as harvest residues (tables 9,10 and fig. 5).

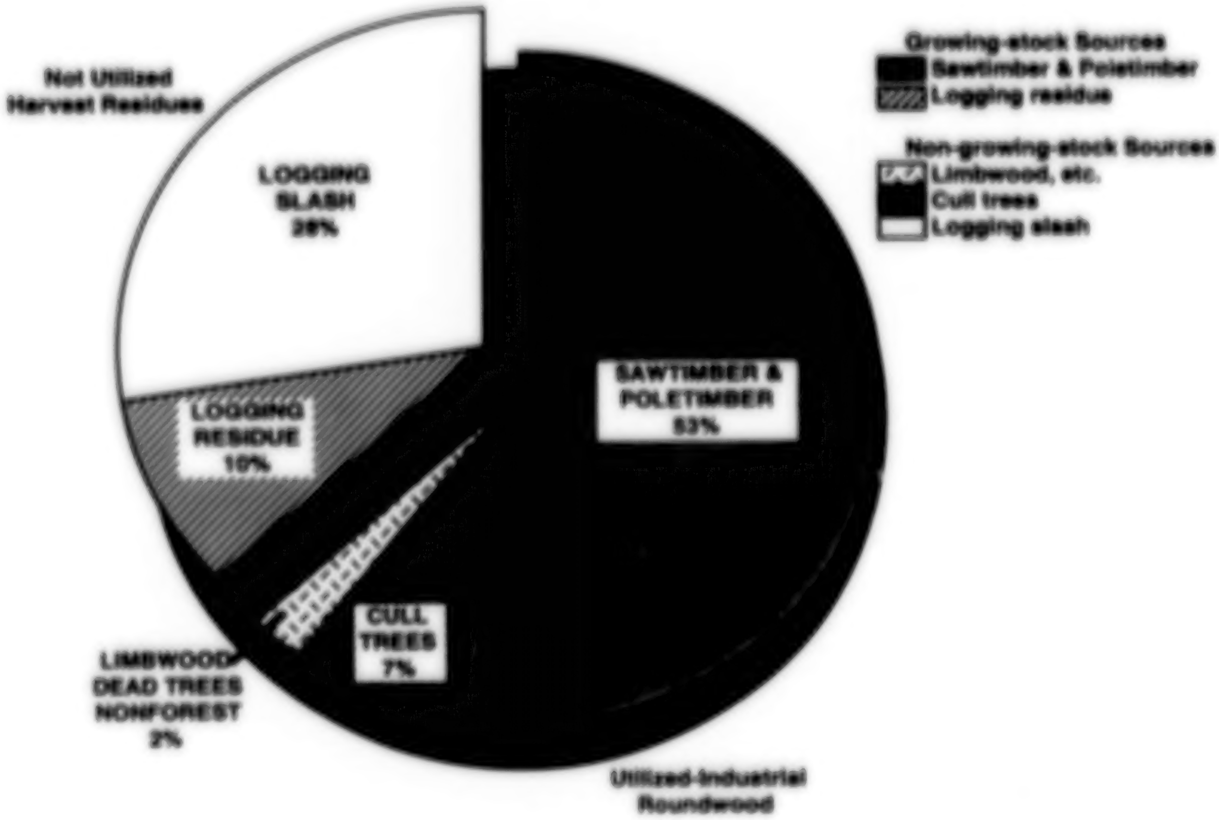

Figure 5.—*Distribution of timber removals for industrial roundwood by source of material, Kansas, 1993.*

- Harvest residues included 333 thousand cubic feet of growing-stock portions of live trees on timberland (logging residues) and 969 thousand cubic feet of tops and cull material (logging slash).

- In 1993, with Kansas's primary forest industry dominated by sawmills, removals for sawtimber supplied most of the volume for industrial roundwood products. Some product volume was extracted from poletimber and non-growing stock sources such as limbwood, cull trees, dead trees, and nonforest trees from city parks.

- Over 85 percent of the woody material removed was harvested from growing-stock sources (sawtimber, poletimber, and harvest residues).

- Timber harvested for industrial roundwood and the resulting generation of logging residues extracted 2.2 million cubic feet of growing-stock volume from Kansas's timberland inventory in 1993 (table 11). In board foot equivalents, 11.7 million board feet of the total was cut from the sawtimber portion of the growing-stock inventory (table 12).

PRIMARY MILL RESIDUES

- During 1993, Kansas's primary wood-using mills generated close to 17 thousand tons of coarse (chippable) wood residue, 10 thousand tons of fine wood residue, and 7 thousand tons of bark (table 13).

- Half of this volume was in the form of coarse wood residue, such as slabs and edgings, which is suitable for chipping (table 13 and fig. 6).

- Eighty-nine percent or more of all residues (coarse, fine, bark) generated at Kansas primary mills was used (table 13 and fig. 7).

- Nearly 40 percent of the mill residues, both wood and bark, were burned as fuel primarily in domestic settings.

- Eleven percent of the mill residues generated in the State still remained unused, but this was an improvement from 1980 when over a quarter of all residues generated went unused.

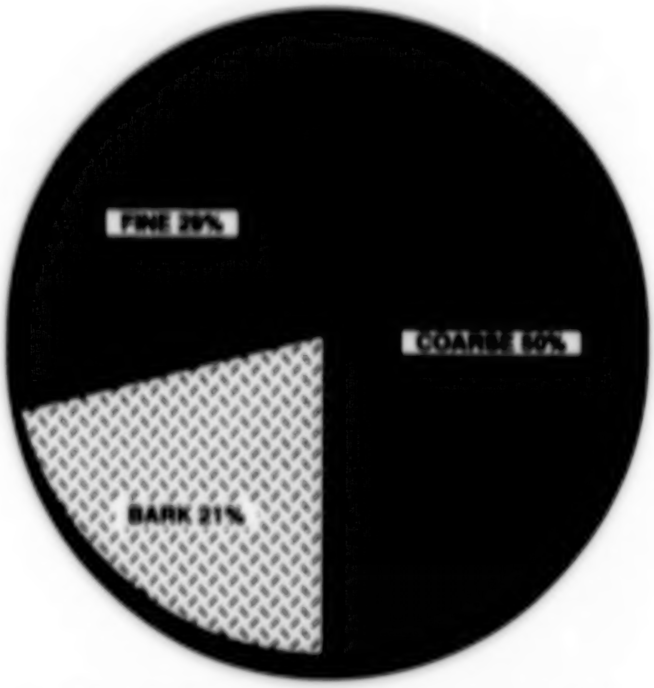

Figure 6.—*Distribution of residues generated by primary wood-using mills by type of residue, Kansas, 1993.*

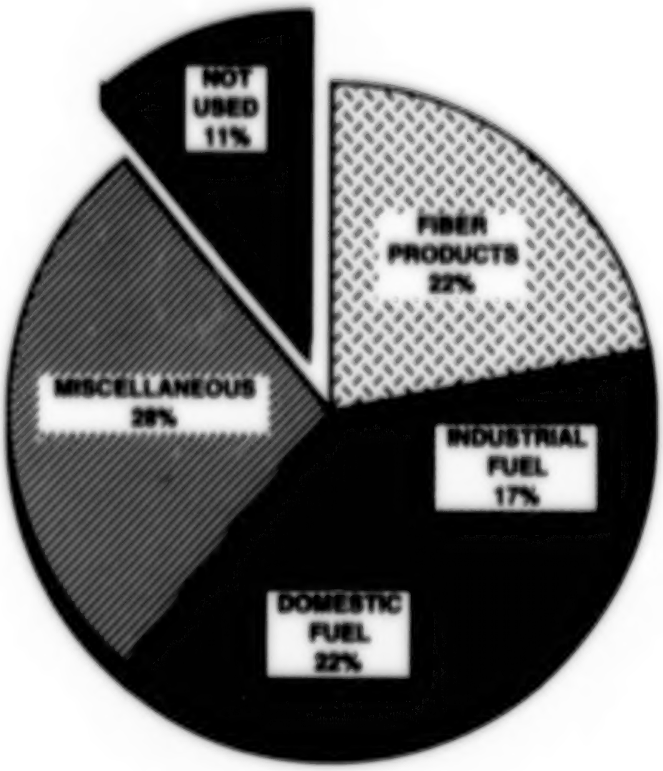

Figure 7.—*Distribution of residues generated by primary wood-using mills by method of disposal, Kansas, 1993.*

APPENDIX

STUDY METHODS

This study was a cooperative effort of Kansas State and Extension Forestry (KSEF) and the North Central Forest Experiment Station (NCFES). Using mail questionnaires supplied by NCFES and designed to determine the size and composition of the State's primary wood-using industry, its use of roundwood, and its generation and disposition of wood residues, KSEF canvassed all primary wood-using mills within the State. Followups to nonresponding mills using additional mailings, telephone, and personal contacts were made by KSEF until a 100-percent response was achieved. Completed questionnaires were sent to NCFES for editing and processing.

As part of data editing and processing, all industrial roundwood volumes reported on the questionnaires were converted to standard units of measure using regional conversion factors. Timber removals by source of material and harvest residues generated during logging were estimated from standard product volumes using factors developed from logging utilization studies previously conducted by NCFES. Finalized data on Kansas' industrial roundwood receipts were loaded into a regional timber removals database where they were supplemented with data on out-of-State uses of Kansas roundwood to provide a complete assessment of Kansas's timber product output.

DEFINITION OF TERMS

Board foot.—Unit of measure applied to roundwood. It relates to lumber that is 1 foot long, 1 foot wide, and 1 inch thick (or its equivalent).

Central stem.—The portion of a tree between a 1-foot stump and the minimum 4.0-inch top diameter outside bark or point where the central stem breaks into limbs.

Coarse mill residue.—Wood residue suitable for chipping such as slabs, edgings, and veneer cores.

Commercial species.—Tree species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality such as hophornbeam, Osage-orange, and redbud.)

Cull removals.—Net volume of rough and rotten trees plus the net volume in sections of the central stem of growing-stock trees that do not meet regional merchantability standards, harvested for industrial roundwood products.

Dead removals.—Net volume of dead trees harvested for industrial roundwood products.

Diameter at breast height (d.b.h.).—The outside bark diameter at 4.5 feet above the forest floor on the uphill side of the tree. For determining breast height, the forest floor includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

Fine mill residue.—Wood residue not suitable for chipping such as sawdust and veneer clippings.

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparing specified standards with basal area and/or number of trees, age or size, and spacing.) The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, or other bodies of water or clearings in forest areas shall be classed as forest if less than 120 feet wide.

Growing-stock removals.—The growing-stock volume removed from the timberland inventory by harvesting industrial roundwood products. (Note: Includes sawtimber removals, poletimber removals, and logging residues.)

Growing-stock tree.—A live timberland tree of commercial species that meets specified standards of size, quality, and merchantability. (Note: Excludes rough, rotten, and dead trees.)

Growing-stock volume.—Net volume of growing-stock trees 5.0 inches d.b.h. and over, from 1 foot above the ground to a minimum 4.0 inch-top diameter outside bark of the central stem or to the point where the central stem breaks into limbs.

Hardwoods.—Dicotyledonous trees, usually broad-leaved and deciduous.

Harvest residues.—The total net volume of unused portions of trees cut or killed by logging. (Note: Includes both logging residues and logging slash.)

Industrial fuelwood.—A roundwood product with or without bark, used to generate energy at non-manufacturing facilities such as schools, correctional institutions, or electric generating plants.

Industrial roundwood products.—Saw logs, pulpwood, veneer logs, poles, commercial posts, piling, cooperage logs, particleboard bolts, shaving bolts, lath bolts, charcoal bolts, and chips from roundwood used for pulp or board products.

Industrial roundwood production.—The quantity of industrial roundwood harvested in a geographic area.

Industrial roundwood receipts.—The quantity of industrial roundwood received by commercial mills in a geographic area.

International 1/4-inch rule.—A log rule or formula for estimating the board foot volume of logs, allowing one-half inch of taper for each 4-foot length. The rule appears in a number of forms that allow for kerf. In this form, a one-quarter inch of kerf is assumed. This rule is used as the USDA Forest Service standard log rule in the Eastern United States.

Limbwood removals.—Net volume of all portions of a tree other than the central stem, (including forks, large limbs, tops, and stumps) harvested for industrial roundwood products.

Logging residue.—The net volume of unused portions of the merchantable central stem of growing-stock trees cut or killed by logging.

Logging slash.—The net volume of unused portions of the unmerchantable (non-growing-stock) sections of trees cut or killed by logging.

Merchantable sections.—Sections of the central stem of growing-stock trees that meet either pulpwood or saw-log specifications.

Net volume.—Gross volume less deductions for rot, sweep, or other defects affecting use for roundwood products.

Noncommercial species.—Trees species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial roundwood products. Classified in volume tables as rough trees.

Nonforest land.—Land that has never supported forests, and land formerly forested where use for timber management is precluded by development for other uses. (Note: Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 39.9-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, improved roads and nonforest strips must be more than 120 feet wide and more than 1 acre to qualify as nonforest land.)

Nonforest land removals.—Net volume of trees on nonforest lands harvested for industrial roundwood products.

Poletimber.—A growing-stock tree at least 5.0 inches d.b.h. but smaller than sawtimber size (9.0 inches d.b.h. for softwoods, 11.0 inches d.b.h. for hardwoods).

Poletimber removals.—Net volume in the merchantable central stem of poletimber trees harvested for industrial roundwood products.

Primary wood-using mills.—Mills receiving roundwood or chips from roundwood for processing into products such as lumber, veneer, and pulp.

Primary wood-using mill residue.—Wood materials (coarse and fine) and bark generated at manufacturing plants from roundwood processed into principal products. These residues include wood products (byproducts) obtained incidental to production of principal products and wood materials not utilized for some product.

Rotten tree.—A tree that does not meet regional merchantability standards because of excessive unsound cull.

Rough tree.—A tree that does not meet regional merchantability standards because of excessive sound cull. Includes noncommercial tree species.

Roundwood.—Logs, bolts, or other round sections cut from trees (including chips from roundwood).

Sapling.—A live tree between 1.0 and 5.0 inches d.b.h.

Sapling removals.—Net volume in saplings harvested for industrial roundwood products.

Saw-log portion.—That portion of the central stem of sawtimber trees between the stump and the saw-log top.

Saw-log top.—The point on the central stem of sawtimber trees above which a saw log cannot be produced. The minimum saw-log top is 7.0 inches d.o.b. for softwoods and 9.0 inches d.o.b. for hardwoods.

Sawtimber removals.—As used in table 9, sawtimber removals refers to the net volume in the merchantable central stem of sawtimber trees harvested for industrial roundwood products. (Note: Includes the saw-log and upper-stem portions of sawtimber trees.) When referring to the sawtimber volume removed from the timberland inventory as in table 12, sawtimber removals refers to the net volume in the saw-log portion of sawtimber trees harvested for roundwood products or left on the ground as harvest residue, and is usually expressed in thousands of board feet (International 1/4-inch rule).

Sawtimber tree.—A growing-stock tree containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9.0 inches d.b.h., and hardwoods must be at least 11.0 inches d.b.h.

Sawtimber volume.—Net volume in the saw-log portion of sawtimber trees.

Short-log (rough tree).—A sawtimber-size tree of commerical species that contains at least one merchantable 8- to 11-foot saw log but not a 12-foot saw log.

Softwoods.—Coniferous trees, usually evergreen, having needles or scale-like leaves.

Timber product output.—The volume of roundwood products produced from an area's forests.

Timberland.—Forest land that is producing, or is capable of producing, in excess of 20 cubic feet per acre per year of industrial roundwood products under natural conditions, is not withdrawn from timber utilization by statute or administrative regulation, and is not associated with urban or rural development.

Tree.—A woody plant usually having one or more perennial stems, a more or less definitely formed crown of foliage, and a height of at least 12 feet at maturity.

Upper stem portion.—That portion of the central stem of sawtimber trees between the saw-log top and the minimum top diameter of 4.0 inches outside bark or the point where the central stem breaks into limbs.

Veneer log.—Log to be used in the production of plywood, finished panels, or veneer sheets, both rotary cut and sliced.

COMMON AND SCIENTIFIC NAMES OF TREE SPECIES MENTIONED IN THIS REPORT

SOFTWOODS	
Ponderosa pine	*Pinus ponderosa*
Eastern redcedar	*Juniperus virginiana*
HARDWOODS	
Ash	
White ash	*Fraxinus americana*
Green ash	*Fraxinus pennsylvanica*
American basswood	*Tilia americana*
Birch	
River birch	*Betula nigra*
Boxelder	*Acer negundo*
Black cherry	*Prunus serotina*
Northern catalpa	*Catalpa speciosa*
Cottonwood	
Eastern cottonwood	*Populus deltoides*
Elm	
American elm	*Ulmus americana*
Rock elm	*Ulmus thomasii*
Siberian elm	*Ulmus pumila*
Slippery elm	*Ulmus rubra*
Hackberry	*Celtis occidentalis*
Hickory	
Bitternut hickory	*Carya cordiformis*
Mockernut hickory	*Carya tomentosa*
Pecan	*Carya illinoensis*
Pignut hickory	*Carya glabra*
Shagbark hickory	*Carya ovata*
Shellbark hickory	*Carya laciniosa*
Honeylocust	*Gleditsia triacanthos*
Silver maple	*Acer saccharinum*
Red mulberry	*Morus rubra*
White oak	
Bur oak	*Quercus macrocarpa*
Chinkapin oak	*Quercus muehlenbergii*
Red oak	
Black oak	*Quercus velutina*
Blackjack oak	*Quercus marilandica*
Northern red oak	*Quercus rubra*
Osage-orange	*Maclura pomifera*
Persimmon (common)	*Diospyros virginiana*
Sycamore	*Platanus occidentalis*
Black walnut	*Juglans nigra*
Black willow	*Salix nigra*

TABLE TITLES

Table 1.—Number of active primary wood-using mills, Kansas, 1980 and 1993

Table 2.—Industrial roundwood receipts by species group and State of origin, Kansas, 1993

Table 3.—Industrial roundwood production by Forest Survey Unit, species group, and type of product, Kansas, 1993

Table 4.—Saw-log production by Forest Survey Unit, species group, and State of destination, Kansas, 1993

Table 5.—Saw-log production from roundwood by Forest Survey Unit, county, and species group, Kansas, 1993

Table 6.—Saw-log receipts by Forest Survey Unit, species group, and State of origin, Kansas, 1993

Table 7.—Veneer-log production by Forest Survey Unit, county, and species group, Kansas, 1993

Table 8.—Veneer-log production by Forest Survey Unit, species group, and State of destination, Kansas, 1993

Table 9.—Timber removals for industrial roundwood by source of material and species group, Kansas, 1993

Table 10.—Harvest residues generated by industrial roundwood harvesting, by Forest Survey Unit, county, and species group, Kansas, 1993

Table 11.—Growing-stock removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Kansas, 1993

Table 12.—Sawtimber removals from timberland for industrial roundwood production by Forest Survey Unit, county, and species group, Kansas, 1993

Table 13.—Residues produced at primary wood-using mills by type of material, type of use, and Forest Survey Unit, Kansas, 1993

Table 1.—Number of active primary wood-using mills, Kansas, 1980 and 1993

Kind of mill	1980	1993
Sawmills		
1,000 mbf + 1/	11	3
Less than 1,000 mbf 1/	48	33
Total	59	36

1/ Thousand board feet, International 1/4-inch rule.

Table 2.—Industrial roundwood receipts by species group and State of origin, Kansas, 1993

(Thousand cubic feet)

Species group	Total	Iowa	Kansas	Missouri	Nebraska	Oklahoma
SOFTWOODS						
Redcedar	12	–	12	–	–	–
Ponderosa pine	(1/)	–	(1/)	–	–	–
Total	9	–	9	–	–	–
HARDWOODS						
Soft maple	158	–	148	–	–	10
River birch	1	–	1	–	–	–
Hickory	2	–	2	–	–	–
Pecan	2	–	2	–	–	–
Hackberry	258	–	241	–	–	17
Ash	181	–	168	–	–	13
Honeylocust	1	–	1	–	–	–
Black walnut	594	74	261	243	15	–
Osage-orange	1	–	1	–	–	–
Sycamore	17	–	17	–	–	–
Cottonwood	378	–	378	–	–	–
Black cherry	(1/)	–	(1/)	–	–	–
Red oak group	191	–	184	–	–	7
White oak group	334	–	332	–	–	2
Black locust	1	–	1	–	–	–
Willow	(1/)	–	(1/)	–	–	–
Basswood	3	–	3	–	–	–
Elm	23	–	17	–	–	7
Other hardwoods	(1/)	–	(1/)	–	–	–
Total	2,145	74	1,757	243	15	56
All species	2,157	74	1,769	243	15	56

1/ Less than 500 cubic feet.

Rows and columns may not sum due to rounding.

Table 3.—Industrial roundwood production by species group, Forest Survey Unit, and type of product, Kansas, 1993 1/

ALL UNITS

Species group	Saw logs		Veneer logs		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS						
Redcedar	57	12	–	–	–	12
Ponderosa pine	1	(4/)	–	–	–	(4/)
Total	58	12	–	–	–	12
HARDWOODS						
Soft maple	1,171	186	–	–	3	189
Hard maple	3	(4/)	–	–	–	(4/)
River birch	7	1	–	–	–	1
Hickory	10	2	1	(4/)	–	2
Pecan	12	2	–	–	–	2
Hackberry	1,517	241	–	–	–	241
Ash	1,005	172	31	7	–	179
Honeylocust	4	1	–	–	–	1
Black walnut	2,553	391	602	85	–	476
Osage-orange	4	1	–	–	–	1
Sycamore	111	18	–	–	–	18
Cottonwood	2,634	406	19	4	5	416
Black cherry	8	1	–	–	–	1
Red oak group	1,203	215	81	18	–	233
White oak group	1,931	345	165	36	–	382
Black locust	4	1	–	–	–	1
Willow	1	(4/)	–	–	–	(4/)
Basswood	112	18	32	7	–	25
Elm	108	17	–	–	–	17
Other hardwoods	3	(4/)	6	1	2	4
Total	12,400	2,017	937	161	10	2,188
All species	12,458	2,029	937	161	10	2,201

(Table 3 continued on next page)

(Table 3 continued)

NORTHEAST UNIT

Species group	Saw logs		Veneer logs		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS						
Redcedar	7	2	–	–	–	2
Ponderosa pine	1	(4/)	–	–	–	(4/)
Total	8	2	–	–	–	2
HARDWOODS						
Soft maple	151	24	–	–	(4/)	24
Hard maple	(5/)	(4/)	–	–	–	(4/)
Hickory	1	(4/)	(5/)	(4/)	–	(4/)
Pecan	4	1	–	–	–	1
Hackberry	284	45	–	–	–	45
Ash	108	18	3	1	–	19
Honeylocust	3	(4/)	–	–	–	(4/)
Black walnut	1,414	216	112	16	–	232
Osage-orange	(5/)	(4/)	–	–	–	(4/)
Sycamore	75	12	–	–	–	12
Cottonwood	540	83	3	1	1	85
Black cherry	8	1	–	–	–	1
Red oak group	172	31	8	1	–	32
White oak group	474	85	86	19	–	104
Black locust	4	1	–	–	–	1
Basswood	69	11	20	4	–	15
Elm	3	4/	–	–	–	(4/)
Other hardwoods	1	(4/)	5/	(4/)	(4/)	(4/)
Total	3,310	529	229	43	2	573
All species	3,318	531	229	43	2	575

(Table 3 continued on next page)

(Table 3 continued)

SOUTHEAST UNIT

Species group 1/	Saw logs		Veneer logs		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS						
Redcedar	26	6	–	–	–	6
Total	26	6	–	–	–	6
HARDWOODS						
Soft maple	1,020	162	–	–	3	164
Hard maple	2	(4/)	–	–	–	(4/)
River birch	7	1	–	–	–	1
Hickory	10	2	1	(4/)	–	2
Pecan	8	1	–	–	–	1
Hackberry	1,230	195	–	–	–	195
Ash	894	153	28	6	–	159
Black walnut	1,138	174	481	69	–	243
Osage-orange	4	1	–	–	–	1
Sycamore	36	6	–	–	–	6
Cottonwood	2,019	322	16	4	4	330
Black cherry	(5/)	(4/)	–	–	–	(4/)
Red oak group	1,030	184	75	17	–	201
White oak group	1,442	257	80	18	–	275
Willow	1	(4/)	–	–	–	(4/)
Basswood	43	7	12	3	–	10
Elm	106	17	–	–	–	17
Other hardwoods	–	–	6	1	2	3
Total	9,055	1,482	708	119	8	1,609
All species	9,081	1,487	708	119	8	1,615

(Table 3 continued on next page)

(Table 3 continued)

WEST UNIT

Species group	Saw logs		Veneer logs		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS						
Redcedar	24	5	–	–	–	5
Total	24	5	–	–	–	5
HARDWOODS						
Soft maple	(5/)	(4/)	–	–	–	(4/)
Hackberry	4	1	–	–	–	1
Ash	3	(4/)	–	–	–	(4/)
Honeylocust	1	(4/)	–	–	–	(4/)
Black walnut	4	1	–	–	–	1
Cottonwood	6	1	–	–	–	1
Red oak group	1	(4/)	–	–	–	(4/)
White oak group	15	3	–	–	–	3
Other hardwoods	1	(4/)	–	–	–	(4/)
Total	35	6	–	–	–	6
All species	59	11	–	–	–	11

1/ Based on utilization studies in the region.

2/ Thousand board feet, International 1/4-inch rule.

3/ Thousand cubic feet.

4/ Less than 500 cubic feet.

5/ Less than 500 board feet.

Rows and columns may not sum due to rounding.

Table 4.—Saw-log production by Forest Survey Unit, species group, and State of destination, Kansas, 1993

(Thousand board feet) 1/

ALL UNITS

Species group	Total	Indiana	Iowa	Kansas	Missouri	Nebraska
SOFTWOODS						
Redcedar	57	–	–	57	–	–
Ponderosa pine	1	–	–	1	–	–
Total	58	–	–	58	–	–
HARDWOODS						
Soft maple	1,171	1	–	933	237	–
Hard maple	3	3	–	–	–	–
River birch	7	–	–	7	–	–
Hickory	10	1	–	9	–	–
Pecan	12	–	–	12	–	–
Hackberry	1,517	–	–	1,517	–	–
Ash	1,005	3	10	982	10	–
Honeylocust	4	–	–	4	–	–
Black walnut	2,553	4	380	1,707	462	–
Osage-orange	4	–	–	4	–	–
Sycamore	111	4	–	106	–	–
Cottonwood	2,634	–	–	2,451	114	69
Black cherry	9	6	–	3	–	–
Red oak group	1,203	33	10	1,031	101	28
White oak group	1,931	15	–	1,858	30	28
Black locust	4	–	–	4	–	–
Willow	1	–	–	1	–	–
Basswood	112	1	–	18	92	–
Elm	108	1	–	106	–	–
Other hardwoods	3	–	–	3	–	–
Total	12,400	73	400	10,756	1,047	124
All species	12,458	73	400	10,814	1,047	124

(Table 4 continued on next page)

(Table 4 continued)

Species group	Total	Indiana	Iowa	Kansas	Missouri	Nebraska
	NORTHEAST UNIT					
SOFTWOODS						
Redcedar	7	–	–	7	–	–
Ponderosa pine	1	–	–	1	–	–
Total	8	–	–	8	–	–
HARDWOODS						
Soft maple	151	2/	–	115	36	–
Hard maple	2/	2/	–	–	–	–
Hickory	1	2/	–	1	–	–
Pecan	4	–	–	4	–	–
Hackberry	284	–	–	284	–	–
Ash	106	2/	1	106	1	–
Honeylocust	3	–	–	3	–	–
Black walnut	1,414	1	70	1,297	45	–
Osage-orange	2/	–	–	2/	–	–
Sycamore	75	3	–	72	–	–
Cottonwood	540	–	–	461	19	68
Black cherry	8	5	–	3	–	–
Red oak group	172	1	1	133	9	28
White oak group	474	8	–	423	15	28
Black locust	4	–	–	4	–	–
Basswood	69	1	–	11	57	–
Elm	3	2/	–	3	–	–
Other hardwoods	1	–	–	1	–	–
Total	3,310	20	72	2,811	182	124
All species	3,318	20	72	2,819	182	124

(Table 4 continued on next page)

(Table 4 continued)

Species group	Total	Indiana	Iowa	Kansas	Missouri	Nebraska
SOUTHEAST UNIT						
SOFTWOODS						
Redcedar	26	–	–	26	–	–
Total	26	–	–	26	–	–
HARDWOODS						
Soft maple	1,020	1	–	817	201	–
Hard maple	2	2	–	–	–	–
River birch	7	–	–	7	–	–
Hickory	10	1	–	8	–	–
Pecan	8	–	–	8	–	–
Hackberry	1,230	–	–	1,230	–	–
Ash	894	3	9	874	9	–
Black walnut	1,136	3	310	405	417	–
Osage-orange	4	–	–	4	–	–
Sycamore	36	1	–	35	–	–
Cottonwood	2,089	–	–	1,994	94	–
Black cherry	2/	2/	–	2/	–	–
Red oak group	1,030	32	9	897	93	–
White oak group	1,442	7	–	1,420	15	–
Willow	1	–	–	1	–	–
Basswood	43	1	–	7	36	–
Elm	105	1	–	104	–	–
Total	9,055	53	328	7,810	864	–
All species	9,081	53	328	7,836	864	–
WEST UNIT						
SOFTWOODS						
Redcedar	24	–	–	24	–	–
Total	24	–	–	24	–	–
HARDWOODS						
Soft maple	2/	–	–	2/	–	–
Hackberry	4	–	–	4	–	–
Ash	3	–	–	3	–	–
Honeylocust	1	–	–	1	–	–
Black walnut	4	–	–	4	–	–
Cottonwood	6	–	–	6	–	–
Red oak group	1	–	–	1	–	–
White oak group	15	–	–	15	–	–
Other hardwoods	1	–	–	1	–	–
Total	35	–	–	35	–	–
All species	59	–	–	59	–	–

1/ International 1/4-inch rule.

2/ Less than 500 board feet.

Rows and columns may not sum due to rounding.

Table 5.—Saw-log production from roundwood by Forest Survey Unit, county, and species group, Kansas, 1993

(Thousand board feet) 1/

Unit and county	Red cedar	Ponderosa pine	Total softwoods	Soft maple	Hard maple	River birch	Hickory	Pecan	Hackberry	Ash	Honeylocust	Black walnut
NORTHEAST UNIT												
Atchison	–	–	–	45	2/	–	–	–	–	–	–	40
Brown	–	–	–	–	–	–	–	–	–	–	–	–
Clay	–	–	–	–	–	–	–	–	–	1	–	1
Doniphan	–	–	–	–	–	–	–	–	–	–	–	22
Douglas	2/	2/	2/	2/	–	–	–	2/	2/	–	–	58
Franklin	7	1	8	60	2/	–	2/	5	60	79	–	433
Geary	–	–	–	–	–	–	–	–	–	–	–	1
Jefferson	–	–	–	–	–	–	–	–	12	–	–	54
Johnson	2/	–	2/	–	–	–	–	2/	–	7	3	288
Leavenworth	–	–	–	–	–	–	2/	–	–	–	–	109
Marshall	–	–	–	–	–	–	–	–	–	1	–	1
Nemaha	–	–	–	–	–	–	–	–	–	–	–	–
Osage	–	–	–	–	–	–	–	–	–	–	–	–
Pottawatomie	–	–	–	45	2/	–	1	–	103	18	–	173
Riley	–	–	–	–	–	–	–	–	70	–	–	40
Shawnee	–	–	–	–	–	–	–	–	36	–	–	[illegible]
Total	7	1	8	151	2/	–	1	4	384	106	3	1,414
SOUTHEAST UNIT												
Allen	2/	–	2/	90	2/	–	–	–	97	71	–	107
Anderson	1	–	1	36	–	–	–	–	36	57	–	106
Bourbon	–	–	–	163	2/	–	–	–	69	99	–	107
Butler	–	–	–	28	–	–	–	–	138	28	–	22
Chase	–	–	–	–	–	–	–	–	–	–	–	–
Chautauqua	–	–	–	38	–	–	–	–	21	20	–	–
Cherokee	–	–	–	11	–	7	6	7	23	1	–	10
Coffey	–	–	–	72	2/	–	–	–	58	43	–	22
Cowley	–	–	–	–	–	–	–	–	–	–	–	11
Crawford	–	–	–	59	2/	–	2	–	50	72	–	111
Elk	7	–	7	14	–	–	–	–	55	29	–	7
Greenwood	–	–	–	28	–	–	–	–	46	43	–	–
Labette	–	–	–	1	–	–	3	1	1	1	–	1
Linn	–	–	–	–	–	–	–	–	–	–	–	2/
Lyon	14	–	14	7	–	–	–	–	7	14	–	128
Marion	4	–	4	–	–	–	–	–	–	–	–	8
Montgomery	–	–	–	104	2/	–	–	–	138	113	–	–
Morris	–	–	–	–	–	–	–	–	–	–	–	–
Neosho	–	–	–	154	2/	–	–	–	173	142	–	214
Wilson	–	–	–	163	2/	–	–	–	251	128	–	192
Woodson	–	–	–	14	–	–	–	–	66	20	–	94
Total	26	–	26	1,020	2	7	10	8	1,230	894	–	1,138
WEST UNIT												
Barber	21	–	21	–	–	–	–	–	–	–	–	–
Cloud	–	–	–	–	–	–	–	–	1	–	–	1
Harvey	1	–	1	2/	–	–	–	–	–	–	–	2/
Mitchell	–	–	–	–	–	–	–	–	1	–	–	1
Norton	–	–	–	–	–	–	–	–	–	–	–	–
Ottawa	3	–	3	–	–	–	–	–	3	3	1	3
Total	24	–	25	2/	–	–	–	–	5	3	1	4
State total	57	1	58	1,171	3	7	10	12	1,617	1,005	4	2,553

(Table 5 continued on next page)

(Table 8 continued)

Unit and county	Osage-orange	Sycamore	Cottonwood	Black cherry	Red oak group	White oak group	Black locust	Basswood	Elm	Other hardwoods	Total hardwoods	All species
NORTHEAST UNIT												
Atchison	–	–	175	–	–	–	–	–	–	–	264	264
Brown	–	–	48	–	14	14	–	43	–	–	119	119
Clay	–	–	–	–	–	–	–	–	–	–	2	2
Doniphan	–	–	–	–	6	–	–	–	–	–	27	27
Douglas	2/	–	2/	–	7	14	–	–	2/	–	80	81
Franklin	–	14	187	8	79	166	3	26	1	1	1,126	1,133
Geary	–	–	–	–	–	4	–	–	–	–	6	6
Jefferson	–	–	43	–	7	53	–	–	–	–	169	169
Johnson	–	–	–	–	7	8	–	–	–	–	314	314
Leavenworth	–	–	–	–	32	48	–	–	–	–	187	187
Marshall	–	–	–	–	–	–	–	–	–	–	3	3
Nemaha	–	–	36	–	14	14	–	–	–	–	62	62
Osage	–	–	–	–	–	38	–	–	–	–	38	38
Pottawatomie	–	57	3	–	–	91	1	–	1	–	496	496
Riley	–	5	6	–	–	1	–	–	–	–	126	126
Shawnee	–	–	41	–	7	23	–	–	–	–	292	292
Total	2/	75	540	8	172	474	4	69	3	1	3,310	3,318
SOUTHEAST UNIT												
Allen	–	–	104	–	121	173	–	–	–	–	782	782
Anderson	–	–	152	2/	62	22	–	–	–	–	512	513
Bourbon	–	–	146	–	80	207	–	–	–	–	672	672
Butler	–	–	219	–	64	21	–	–	–	–	519	519
Chase	–	–	–	–	–	38	–	–	–	–	38	38
Chautauqua	–	–	–	–	26	7	–	–	14	–	124	124
Cherokee	1	11	182	–	69	10	–	–	–	–	318	318
Coffey	–	–	14	–	–	14	–	–	14	–	234	234
Cowley	–	–	117	–	–	10	–	–	–	–	138	138
Crawford	1	9	363	–	79	141	–	–	–	–	687	687
Elk	–	–	–	–	36	7	–	–	14	–	158	166
Greenwood	–	–	–	–	26	7	–	–	14	–	167	167
Labette	1	1	26	–	41	4	–	–	–	–	87	87
Linn	–	–	–	–	–	–	–	–	–	–	0	0
Lyon	–	14	69	–	14	76	–	43	7	–	379	382
Marion	–	–	–	–	–	1	–	–	–	–	10	14
Montgomery	–	–	–	–	26	21	–	–	28	–	482	482
Morris	–	–	–	–	–	106	–	–	–	–	106	106
Neosho	–	–	292	–	181	207	–	–	–	–	1,342	1,342
Wilson	–	–	248	–	153	268	–	–	14	–	1,418	1,418
Woodson	–	–	148	–	48	104	–	–	–	–	502	502
Total	4	36	2,060	2/	1,030	1,442	–	43	105	–	9,056	9,081
WEST UNIT												
Barber	–	–	–	–	–	–	–	–	–	–	–	21
Cloud	–	–	1	–	1	1	–	–	–	–	3	3
Harvey	–	–	–	–	–	–	–	–	–	–	1	1
Mitchell	–	–	1	–	1	1	–	–	–	–	3	3
Norton	–	–	5	–	–	–	–	–	–	–	5	5
Ottawa	–	–	–	–	–	14	–	–	–	1	23	26
Total	–	–	8	–	1	15	–	–	–	1	35	59
State total	4	111	2,604	8	1,203	1,931	4	112	108	3	12,401	12,458

1/ International 1/4-inch rule

2/ Less than 500 board feet.

Rows and columns may not sum due to rounding.

Table 6.—Saw-log receipts by Forest Survey Unit, species group, and State of origin, Kansas, 1993

(Thousand board feet) 1/

ALL UNITS

Species group	Total	Iowa	Kansas	Missouri	Nebraska	Oklahoma
SOFTWOODS						
Redcedar	57	–	57	–	–	–
Ponderosa pine	1	–	1	–	–	–
Total	58	–	58	–	–	–
HARDWOODS						
Soft maple	995	–	932	–	–	62
River birch	7	–	7	–	–	–
Hickory	9	–	9	–	–	–
Pecan	12	–	12	–	–	–
Hackberry	1,627	–	1,517	–	–	110
Ash	1,065	–	982	–	–	83
Honeylocust	4	–	4	–	–	–
Black walnut	3,257	339	1,707	1,110	101	–
Osage-orange	4	–	4	–	–	–
Sycamore	106	–	106	–	–	–
Cottonwood	2,451	–	2,451	–	–	–
Black cherry	3	–	3	–	–	–
Red oak group	1,072	–	1,031	–	–	41
White oak group	1,872	–	1,858	–	–	14
Black locust	4	–	4	–	–	–
Willow	1	–	1	–	–	–
Basswood	18	–	18	–	–	–
Elm	148	–	106	–	–	41
Other hardwoods	3	–	3	–	–	–
Total	12,659	339	10,756	1,110	101	352
All species	12,717	339	10,814	1,110	101	352

(Table 6 continued on next page)

(Table 6 continued)

NORTHEAST UNIT

Species group	Total	Iowa	Kansas	Missouri	Nebraska	Oklahoma
SOFTWOODS						
Redcedar	7	–	7	–	–	–
Total	7	–	7	–	–	–
HARDWOODS						
Soft maple	73	–	73	–	–	–
Hickory	1	–	1	–	–	–
Pecan	3	–	3	–	–	–
Hackberry	249	–	249	–	–	–
Ash	50	–	50	–	–	–
Honeylocust	3	–	3	–	–	–
Black walnut	2,814	339	1,263	1,110	101	–
Sycamore	72	–	72	–	–	–
Cottonwood	279	–	279	–	–	–
Black cherry	3	–	3	–	–	–
Red oak group	73	–	73	–	–	–
White oak group	250	–	250	–	–	–
Black locust	4	–	4	–	–	–
Basswood	11	–	11	–	–	–
Elm	3	–	3	–	–	–
Other hardwoods	1	–	1	–	–	–
Total	3,888	339	2,337	1,110	101	–
All species	3,894	339	2,344	1,110	101	–

SOUTHEAST UNIT

Species group	Total	Iowa	Kansas	Missouri	Nebraska	Oklahoma
SOFTWOODS						
Redcedar	27	–	27	–	–	–
Ponderosa pine	1	–	1	–	–	–
Total	28	–	28	–	–	–
HARDWOODS						
Soft maple	921	–	859	–	–	62
River birch	7	–	7	–	–	–
Hickory	8	–	8	–	–	–
Pecan	9	–	9	–	–	–
Hackberry	1,375	–	1,264	–	–	110
Ash	1,012	–	929	–	–	83
Black walnut	439	–	439	–	–	–
Osage-orange	4	–	4	–	–	–
Sycamore	35	–	35	–	–	–
Cottonwood	2,167	–	2,167	–	–	–
Black cherry	2/	–	2/	–	–	–
Red oak group	998	–	957	–	–	41
White oak group	1,607	–	1,593	–	–	14
Willow	1	–	1	–	–	–
Basswood	7	–	7	–	–	–
Elm	145	–	104	–	–	41
Total	8,735	–	8,383	–	–	352
All species	8,763	–	8,411	–	–	352

(Table 6 continued on next page)

(Table 6 continued)

WEST UNIT

Species group	Total	Iowa	Kansas	Missouri	Nebraska	Oklahoma
SOFTWOODS						
Redcedar	24	–	24	–	–	–
Total	24	–	24	–	–	–
HARDWOODS						
Soft maple	2/	–	2/	–	–	–
Hackberry	4	–	4	–	–	–
Ash	3	–	3	–	–	–
Honeylocust	1	–	1	–	–	–
Black walnut	4	–	4	–	–	–
Cottonwood	6	–	6	–	–	–
Red oak group	1	–	1	–	–	–
White oak group	15	–	15	–	–	–
Other hardwoods	1	–	1	–	–	–
Total	35	–	35	–	–	–
All species	59	–	59	–	–	–

1/ International 1/4-inch rule.

2/ Less than 500 board feet.

Rows and columns may not sum due to rounding.

Table 7.—Veneer log production by Forest Survey Unit, county, and species group, Kansas, 1993

(Thousand board feet) 1/

Unit and county	Hickory	Ash	Black walnut	Cotton-wood	Red oak group	White oak group	Bass-wood	Other hard-woods	All species
NORTHEAST UNIT									
Atchison	–	–	–	2	–	–	–	–	2
Brown	–	–	–	–	–	–	12	–	12
Douglas	–	–	–	–	–	–	–	2/	2/
Franklin	2/	3	67	2	6	10	7	2/	95
Jefferson	–	–	–	–	–	17	–	–	17
Johnson	–	–	45	–	–	–	–	–	45
Leavenworth	2/	–	–	–	–	15	–	–	15
Osage	–	–	–	–	–	12	–	–	12
Pottawatomie	2/	–	–	–	–	24	–	2/	24
Shawnee	–	–	–	–	–	7	–	–	7
Total	2/	3	112	3	6	85	20	2/	229
SOUTHEAST UNIT									
Allen	–	3	50	–	9	–	–	–	62
Anderson	–	2	47	2	6	–	–	–	57
Bourbon	–	4	50	1	6	–	–	–	61
Butler	–	–	–	2	5	–	–	–	7
Chase	–	–	–	–	–	12	–	–	12
Chautauqua	–	–	–	–	–	–	–	1	1
Cherokee	2/	–	–	1	9	–	–	–	11
Coffey	–	2	–	–	–	–	–	1	2
Crawford	2/	3	52	3	10	–	–	–	68
Elk	–	–	–	–	–	–	–	1	1
Greenwood	–	2	–	–	–	–	–	1	2
Labette	2/	–	–	–	–	–	–	–	2/
Lyon	–	–	60	–	–	24	12	2/	97
Montgomery	–	4	–	–	–	–	–	2	6
Morris	–	–	–	–	–	34	–	–	34
Neosho	–	5	100	3	13	–	–	–	120
Wilson	–	5	90	2	12	9	–	1	118
Woodson	–	–	44	1	4	–	–	–	49
Total	1	28	491	16	75	80	12	6	708
State total	1	31	602	19	81	165	32	6	937

1/ International 1/4-inch rule.

2/ Less than 500 board feet.

Rows and columns may not sum due to rounding.

Table 8.—Veneer-log production by Forest Survey Unit, species group, and State of destination, Kansas, 1993

(Thousand board feet) 1/

Survey Unit and species group	Total	Missouri	Other foreign
ALL UNITS			
Hickory	1	–	1
Ash	31	–	31
Black walnut	602	36	566
Cottonwood	19	–	19
Red oak group	81	–	81
White oak group	165	–	165
Basswood	32	–	32
Other hardwoods	6	6	1
Total	937	41	896
NORTHEAST UNIT			
Hickory	(2/)	–	(2/)
Ash	3	–	3
Black walnut	112	7	105
Cottonwood	3	–	3
Red oak group	6	–	6
White oak group	85	–	85
Basswood	20	–	20
Other hardwoods	(2/)	(2/)	(2/)
Total	229	7	222
SOUTHEAST UNIT			
Hickory	1	–	1
Ash	28	–	28
Black walnut	491	29	461
Cottonwood	16	–	16
Red oak group	75	–	75
White oak group	80	–	80
Basswood	12	–	12
Other hardwoods	6	5	1
Total	708	35	674

1/ International 1/4-inch rule.

2/ Less than 500 board feet.

Rows and columns may not sum due to rounding.

Table 9.—Timber removals for industrial roundwood by source of material and species group, Kansas, 1993 1/

(Thousand cubic feet)

ALL UNITS

Species group	Growing stock: Used for products: Saw timber	Growing stock: Used for products: Pole timber	Growing stock: Logging residue (not used)	Growing stock: Total	Non-growing stock: Used for products: Limb-wood	Non-growing stock: Used for products: Sap-lings	Non-growing stock: Used for products: Cull trees	Non-growing stock: Used for products: Dead trees	Non-growing stock: Used for products: Nonforest trees	Non-growing stock: Logging slash (not used)	Non-growing stock: Total	Total material used for products	Total material not used	Total material harvested
SOFTWOODS														
Redcedar	12.1	–	0.1	12.2	–	–	0.1	–	–	5.6	5.6	12.2	5.6	17.8
Ponderosa pine	0.2	–	2/	0.2	–	–	2/	–	–	0.1	0.1	0.2	0.1	0.3
Total	12.3	–	0.1	12.4	–	–	0.1	–	–	5.6	5.7	12.4	5.7	18.1
HARDWOODS														
Soft maple	163.2	0.3	18.1	181.6	–	–	20.1	0.3	–	85.2	105.6	183.9	103.3	287.2
Hard maple	0.4	–	0.2	0.6	2/	–	2/	–	–	0.3	0.3	0.5	0.4	0.9
River birch	0.9	–	0.1	1.1	–	–	0.1	2/	–	0.5	0.6	1.1	0.6	1.7
Hickory	1.8	–	0.7	2.5	2/	–	0.1	–	–	1.1	1.2	1.9	1.7	3.7
Pecan	1.8	–	0.8	2.6	0.1	–	0.1	–	–	1.1	1.3	2.1	1.9	4.0
Hackberry	208.0	–	23.1	231.0	–	–	25.1	8.8	–	105.9	139.8	240.9	127.0	367.8
Ash	182.3	–	44.8	227.1	4.3	–	12.1	–	–	97.7	114.1	198.8	142.5	341.3
Honeylocust	0.6	–	0.3	0.9	2/	–	2/	–	–	0.4	0.5	0.7	0.7	1.4
Black walnut	400.2	–	36.9	437.2	7.1	–	10.5	–	57.6	199.6	285.0	475.7	229.5	705.2
Osage-orange	–	–	–	–	2/	–	0.7	–	–	0.7	1.4	0.7	0.7	1.4
Sycamore	15.2	–	1.7	16.9	–	–	1.9	0.5	–	7.6	10.0	17.6	9.3	26.9
Cottonwood	413.4	0.6	62.1	476.1	–	–	–	–	–	212.6	212.6	413.9	274.8	688.7
Black cherry	1.1	–	0.1	1.2	–	–	0.1	2/	–	0.6	0.6	1.3	0.7	2.0
Red oak group	154.8	7.5	45.8	207.8	0.1	–	70.9	–	–	93.5	164.5	233.2	139.3	372.5
White oak group	253.4	13.0	73.8	340.2	0.3	–	113.7	–	–	153.6	267.6	380.4	227.4	607.8
Black locust	0.6	–	0.3	0.9	2/	–	2/	–	–	0.4	0.5	0.7	0.7	1.4
Willow	0.2	–	2/	0.2	–	–	2/	2/	–	0.1	0.1	0.2	0.1	0.3
Basswood	22.6	–	2.3	24.9	–	–	1.9	0.5	–	11.2	13.6	25.0	13.5	38.5
Elm	14.8	–	1.8	16.6	–	–	1.8	0.5	–	7.4	9.7	17.1	9.2	26.3
Other hardwoods	3.7	0.2	0.5	4.4	2/	–	2/	–	–	0.9	1.0	3.9	1.4	5.3
Total	1,824.2	20.3	352.0	2,177.2	12.1	–	280.4	10.7	57.6	953.0	1,305.6	2,185.8	1,290.0	3,484.4
All species	1,836.5	20.3	353.0	2,190.0	12.1	–	280.5	10.7	57.6	958.6	1,312.6	2,200.0	1,301.6	3,502.6

(Table 9 continued on next page)

(Table 8 continued)

Species group	Growing stock: Used for products: Saw timber	Growing stock: Used for products: Pole timber	Growing stock: Logging residue (not used)	Growing stock: Total	Non-growing stock: Used for products: Limb wood	Non-growing stock: Used for products: Saw logs	Non-growing stock: Used for products: Cull trees	Non-growing stock: Used for products: Dead trees	Non-growing stock: Used for products: Nonforest trees	Non-growing stock: Logging residue (not used)	Non-growing stock: Total	Total material used for products	Total material not used	Total material harvested
	NORTHEAST UNIT													
SOFTWOODS														
Redcedar	1.5	--	Z/	1.5	--	--	Z/	--	--	0.7	0.7	1.5	0.7	2.2
Ponderosa Pine	0.2	--	Z/	0.2	--	--	Z/	--	--	0.1	0.1	0.2	0.1	0.3
Total	1.7	--	Z/	1.7	--	--	Z/	--	--	0.8	0.8	1.7	0.8	2.5
HARDWOODS														
Soft maple	21.1	Z/	2.3	23.4	--	--	2.6	0.7	--	10.6	13.6	24.4	10.7	37.1
Hard maple	0.1	--	Z/	0.1	Z/	--	Z/	--	--	Z/	Z/	0.1	0.1	0.1
Hickory	0.2	--	0.1	0.3	Z/	--	Z/	--	--	0.1	0.1	0.2	0.2	0.5
Pecan	0.4	--	0.2	0.6	Z/	--	Z/	--	--	0.4	0.4	0.6	0.6	1.2
Hackberry	38.9	--	4.3	43.2	--	--	4.6	1.3	--	15.4	25.6	45.0	25.7	69.6
Ash	17.3	--	6.9	24.2	0.5	--	1.3	--	--	10.4	12.2	19.1	17.3	36.4
Honeylocust	0.4	--	0.2	0.6	Z/	--	Z/	--	--	0.3	0.3	0.6	0.4	0.9
Black walnut	194.4	--	18.3	212.7	4.0	--	5.8	--	28.0	91.7	129.5	232.1	110.1	342.2
Osage-orange	--	--	--	--	Z/	--	Z/	--	--	Z/	Z/	Z/	Z/	Z/
Sycamore	10.2	--	1.1	11.4	--	--	1.3	0.3	--	5.1	6.7	11.8	6.3	18.1
Cottonwood	84.8	0.1	12.7	97.6	--	--	--	--	--	43.0	43.0	84.9	56.2	141.1
Black cherry	1.1	--	0.1	1.2	--	--	0.1	Z/	--	0.6	0.7	1.3	0.7	2.0
Red oak group	20.9	1.1	6.4	28.4	Z/	--	10.1	--	--	12.7	22.6	32.1	19.1	51.2
White oak group	73.2	2.8	18.9	95.1	Z/	--	27.6	--	--	42.7	70.7	104.1	61.6	165.7
Black locust	0.6	--	0.3	0.9	Z/	--	0.1	--	--	0.4	0.6	0.7	0.7	1.4
Basswood	13.9	--	1.4	15.3	--	--	1.2	0.3	--	6.9	8.4	15.4	8.3	23.7
Elm	0.4	--	Z/	0.4	--	--	Z/	Z/	--	0.2	0.5	0.6	0.2	0.7
Other hardwoods	0.3	Z/	0.1	0.4	Z/	--	Z/	--	--	0.1	0.4	0.3	0.2	0.6
Total	478.4	6.1	73.5	558.0	4.8	--	55.1	2.7	28.0	244.3	335.3	573.1	318.4	891.6
All species	480.2	6.1	73.6	559.7	4.8	--	55.1	2.7	28.0	245.1	336.1	574.8	319.2	894.0

(Table 8 continued on next page)

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(Table 8 continued)

Species group	Growing stock: Used for products: Saw timber	Growing stock: Used for products: Pole timber	Growing stock: Logging residue (not used)	Growing stock: Total	Non-growing stock: Used for products: Limb wood	Non-growing stock: Used for products: Saplings	Non-growing stock: Used for products: Cull trees	Non-growing stock: Used for products: Dead trees	Non-growing stock: Used for products: Nonforest trees	Non-growing stock: Logging slash (not used)	Non-growing stock: Total	Total material used for products	Total material not used	Total material harvested
	SOUTHEAST UNIT													
SOFTWOODS														
Redcedar	3.6	–	2/	3.6	–	–	2/	–	–	2.6	2.6	3.6	2.6	6.2
Total	3.6	–	2/	3.6	–	–	2/	–	–	2.6	2.6	3.6	2.6	6.2
HARDWOODS														
Soft maple	142.1	0.2	15.7	158.1	–	–	17.5	4.8	–	68.4	90.0	164.5	85.6	250.0
Hard maple	0.4	–	0.1	0.6	2/	–	2/	–	–	0.2	0.2	0.4	0.4	0.6
River birch	0.9	–	0.1	1.1	–	–	0.1	2/	–	0.5	0.6	1.1	0.8	1.7
Hickory	1.6	–	0.6	2.2	2/	–	0.1	–	–	1.0	1.1	1.8	1.6	3.4
Pecan	1.3	–	0.5	1.6	2/	–	0.1	–	–	0.8	0.8	1.4	1.3	2.7
Hackberry	168.6	–	18.7	187.5	–	–	21.1	5.5	–	84.2	110.8	195.3	102.9	298.2
Ash	144.6	–	57.6	202.2	3.6	–	10.7	–	–	87.0	101.7	158.3	144.6	303.6
Black walnut	206.3	–	18.8	225.6	3.2	–	4.7	–	39.7	97.6	135.1	242.9	116.1	360.0
Osage-orange	–	–	–	–	2/	–	0.7	–	–	0.7	1.4	0.7	0.7	1.4
Sycamore	4.9	–	0.5	5.5	–	–	0.6	0.2	–	2.5	3.2	5.7	3.0	8.7
Cottonwood	325.7	0.4	49.3	375.4	–	–	–	–	–	168.7	168.7	330.1	218.0	548.1
Black cherry	2/	–	0.0	0.0	–	–	2/	2/	–	2/	2/	2/	2/	0.1
Red oak group	133.8	6.4	30.2	170.4	0.1	–	60.7	–	–	80.5	141.3	201.0	119.7	320.6
White oak group	181.6	8.9	54.3	244.8	0.1	–	84.8	–	–	109.9	195.0	275.5	164.2	439.6
Willow	0.2	–	2/	0.2	–	–	2/	2/	–	0.1	0.1	0.2	0.1	0.3
Basswood	0.7	–	0.0	0.6	–	–	0.7	0.2	–	4.3	5.2	9.6	5.2	14.8
Elm	14.4	–	1.6	16.0	–	–	1.8	0.5	–	7.2	9.5	16.6	8.8	25.4
Other hardwoods	3.2	0.2	0.3	3.6	–	–	–	–	–	0.7	0.7	3.2	1.0	4.3
Total	1341.2	19.1	258.2	1613.5	7.6	–	203.5	11.0	39.7	715.5	987.6	1909.4	873.7	2583.1
All species	1346.8	17.1	258.2	1621.1	7.6	–	203.5	11.0	39.7	718.0	975.1	1915.0	876.2	2591.2

(Table 8 continued on next page)

(Table 2 continued)

Species group	Growing stock: Used for products: Saw timber	Growing stock: Used for products: Pole timber	Growing stock: Logging residue (not used)	Growing stock: Total	Non-growing stock: Used for products: Limb-wood	Non-growing stock: Used for products: Sap-lings	Non-growing stock: Used for products: Cull trees	Non-growing stock: Used for products: Dead trees	Non-growing stock: Used for products: Nonforest trees	Non-growing stock: Logging waste (not used)	Non-growing stock: Total	Total material used for products	Total material not used	Total material harvested
WEST UNIT														
SOFTWOODS														
Redcedar	5.1	–	2/	5.1	–	–	2/	–	–	2.3	2.3	5.1	2.3	7.4
Total	5.1	–	2/	5.1	–	–	2/	–	–	2.3	2.3	5.1	2.3	7.4
HARDWOODS														
Soft maple	2/	–	2/	2/	–	–	2/	2/	–	2/	2/	2/	2/	2/
Hackberry	0.5	–	0.1	0.6	–	–	0.1	2/	–	0.3	0.3	0.6	0.3	0.9
Ash	0.4	–	0.2	0.6	2/	–	2/	–	–	0.3	0.3	0.5	0.4	0.9
Honeylocust	0.2	–	0.1	0.3	2/	–	2/	–	–	0.1	0.2	0.2	0.2	0.5
Black walnut	0.5	–	0.1	0.6	2/	–	2/	–	0.1	0.3	0.4	0.7	0.3	1.0
Cottonwood	0.9	–	0.1	1.1	–	–	–	–	–	0.5	0.6	0.9	0.6	1.5
Red oak group	0.1	2/	2/	0.2	2/	–	0.1	–	–	0.1	0.1	0.2	0.1	0.3
White oak group	1.7	0.1	0.6	2.5	2/	–	0.9	–	–	1.0	1.9	2.6	1.6	4.2
Other hardwoods	0.2	–	0.1	0.3	2/	–	2/	–	–	0.1	0.2	0.2	0.2	0.5
Total	4.6	0.1	1.2	5.9	2/	–	1.1	2/	0.1	2.5	3.6	6.0	3.8	9.8
All species	9.7	0.1	1.2	11.0	2/	–	1.1	2/	0.1	4.8	5.9	11.1	6.1	17.2

1/ Based on utilization studies in the region.

2/ Less than 100 cubic feet.

Rows and columns may not sum due to rounding.

Table 10.—Harvest residues generated by industrial roundwood harvesting, by Forest Survey Unit, county, and species group, Kansas, 1993

(Thousand cubic feet)

Unit and county	Red-cedar	Ponderosa pine	Total softwoods	Soft maple	Hard maple	River birch	Hickory	Pecan	Hackberry	Ash	Honeylocust	Black walnut
NORTHEAST UNIT												
Atchison	–	–	–	4	(1/)	–	–	–	–	–	–	3
Brown	–	–	–	–	–	–	–	–	–	–	–	–
Clay	–	–	–	–	–	–	–	–	–	(1/)	–	(1/)
Doniphan	–	–	–	–	–	–	–	–	–	–	–	2
Douglas	(1/)	(1/)	(1/)	(1/)	–	–	–	(1/)	(1/)	–	–	4
Franklin	1	(1/)	1	5	(1/)	–	(1/)	(1/)	5	13	–	36
Geary	–	–	–	–	–	–	–	–	–	–	–	9
Jefferson	–	–	–	–	–	–	–	–	1	–	–	4
Johnson	(1/)	–	(1/)	–	–	–	–	(1/)	–	1	(1/)	24
Leavenworth	–	–	–	–	–	–	(1/)	–	–	–	–	8
Marshall	–	–	–	–	–	–	–	–	–	(1/)	–	(1/)
Nemaha	–	–	–	–	–	–	–	–	–	–	–	–
Osage	–	–	–	–	–	–	–	–	–	–	–	–
Pottawatomie	–	–	–	4	(1/)	–	(1/)	–	9	3	–	13
Riley	–	–	–	–	–	–	–	–	6	–	–	5
Shawnee	–	–	–	–	–	–	–	–	3	–	–	12
Total	1	(1/)	1	13	(1/)	–	(1/)	1	24	17	(1/)	110
SOUTHEAST UNIT												
Allen	(1/)	–	(1/)	8	(1/)	–	–	–	8	12	–	11
Anderson	(1/)	–	(1/)	3	–	–	–	–	3	9	–	10
Bourbon	–	–	–	14	(1/)	–	–	–	6	16	–	11
Butler	–	–	–	2	–	–	–	–	12	4	–	2
Chase	–	–	–	–	–	–	–	–	–	–	–	–
Chautauqua	–	–	–	2	–	–	–	–	2	4	–	–
Cherokee	–	–	–	1	–	1	1	1	2	(1/)	–	1
Coffey	–	–	–	6	(1/)	–	–	–	5	7	–	2
Cowley	–	–	–	–	–	–	–	–	–	–	–	1
Crawford	–	–	–	5	(1/)	–	(1/)	–	4	12	–	12
Elk	1	–	1	1	–	–	–	–	5	4	–	(1/)
Greenwood	–	–	–	2	–	–	–	–	4	7	–	–
Labette	–	–	–	(1/)	–	–	1	(1/)	(1/)	(1/)	–	(1/)
Linn	–	–	–	–	–	–	–	–	–	–	–	(1/)
Lyon	1	–	1	1	–	–	–	–	1	2	–	13
Marion	(1/)	–	(1/)	–	–	–	–	–	–	–	–	1
Montgomery	–	–	–	13	(1/)	–	–	–	12	16	–	–
Morris	–	–	–	–	–	–	–	–	–	–	–	–
Neosho	–	–	–	13	(1/)	–	–	–	14	23	–	22
Wilson	–	–	–	16	(1/)	–	–	–	21	21	–	30
Woodson	–	–	–	1	–	–	–	–	6	4	–	10
Total	3	–	3	86	(1/)	1	2	1	103	145	–	118
WEST UNIT												
Barber	2	–	2	–	–	–	–	–	–	–	–	–
Cloud	–	–	–	–	–	–	–	–	(1/)	–	–	(1/)
Harvey	(1/)	–	(1/)	(1/)	–	–	–	–	–	–	–	(1/)
Mitchell	–	–	–	–	–	–	–	–	(1/)	–	–	(1/)
Norton	–	–	–	–	–	–	–	–	–	–	–	–
Ottawa	(1/)	–	(1/)	–	–	–	–	–	(1/)	(1/)	(1/)	(1/)
Total	2	–	2	(1/)	–	–	–	–	(1/)	(1/)	(1/)	(1/)
State total	6	(1/)	6	99	(1/)	1	2	2	127	162	1	228

(Table 10 continued on next page)

(Table 10 continued)

Unit and county	Osage-orange	Sycamore	Cotton-wood	Black cherry	Red oak group	White oak group	Black locust	Bass-wood	Elm	Other hard-woods	Total hard-woods	All species
NORTHEAST UNIT												
Atchison	–	–	18	–	–	–	–	–	–	–	25	25
Brown	–	–	5	–	1	1	–	5	–	–	13	13
Clay	–	–	–	–	–	–	–	–	–	–	(1/)	(1/)
Doniphan	–	–	–	–	1	–	–	–	–	–	2	2
Douglas	(1/)	–	(1/)	–	1	1	–	–	(1/)	(1/)	7	7
Franklin	–	1	20	1	9	19	(1/)	3	(1/)	(1/)	113	114
Geary	–	–	–	–	–	(1/)	–	–	–	–	1	1
Jefferson	–	–	4	–	1	8	–	–	–	–	18	18
Johnson	–	–	–	–	1	1	–	–	–	–	27	27
Leavenworth	–	–	–	–	3	7	–	–	–	–	18	18
Marshall	–	–	–	–	–	–	–	–	–	–	(1/)	(1/)
Nemaha	–	–	4	–	1	1	–	–	–	–	7	7
Osage	–	–	–	–	–	8	–	–	–	–	8	8
Pottawatomie	–	5	(1/)	–	–	13	(1/)	–	(1/)	(1/)	46	46
Riley	–	(1/)	1	–	–	(1/)	–	–	–	–	10	10
Shawnee	–	–	4	–	1	3	–	–	–	–	25	25
Total	(1/)	6	56	1	19	62	1	8	(1/)	(1/)	318	319
SOUTHEAST UNIT												
Allen	–	–	11	–	14	18	–	–	–	–	82	82
Anderson	–	–	19	(1/)	10	2	–	–	–	–	56	57
Bourbon	–	–	15	–	9	22	–	–	–	–	94	94
Butler	–	–	23	–	8	2	–	–	–	–	52	52
Chase	–	–	–	–	–	6	–	–	–	–	6	6
Chautauqua	–	–	–	–	3	1	–	–	1	(1/)	13	13
Cherokee	(1/)	1	17	–	9	1	–	–	–	–	34	34
Coffey	–	–	1	–	–	1	–	–	1	(1/)	23	23
Cowley	–	–	12	–	–	1	–	–	–	–	14	14
Crawford	(1/)	1	38	–	10	15	–	–	–	–	86	86
Elk	–	–	–	–	4	1	–	–	1	(1/)	16	17
Greenwood	–	–	–	–	3	1	–	–	1	(1/)	18	18
Labette	(1/)	(1/)	3	–	4	(1/)	–	–	–	–	9	9
Linn	–	–	–	–	–	–	–	–	–	–	(1/)	(1/)
Lyon	–	1	7	–	1	11	–	5	1	(1/)	44	45
Marion	–	–	–	–	–	(1/)	–	–	–	–	1	1
Montgomery	–	–	–	–	3	2	–	–	2	(1/)	51	51
Morris	–	–	–	–	–	16	–	–	–	–	16	16
Neosho	–	–	31	–	19	22	–	–	–	–	144	144
Wilson	–	–	26	–	18	30	–	–	1	(1/)	151	151
Woodson	–	–	15	–	6	11	–	–	–	–	53	53
Total	1	3	218	(1/)	120	164	–	5	9	1	974	976
WEST UNIT												
Barber	–	–	–	–	–	–	–	–	–	–	–	2
Cloud	–	–	(1/)	–	(1/)	(1/)	–	–	–	–	(1/)	(1/)
Harvey	–	–	–	–	–	–	–	–	–	–	(1/)	(1/)
Mitchell	–	–	(1/)	–	(1/)	(1/)	–	–	–	–	(1/)	(1/)
Norton	–	–	1	–	–	–	–	–	–	–	1	1
Ottawa	–	–	–	–	–	1	–	–	–	(1/)	3	3
Total	–	–	1	–	(1/)	2	–	–	–	(1/)	4	6
State total	1	9	275	1	139	227	1	13	9	1	1,298	1,302

1/ Less than 500 cubic feet.

Rows and columns may not sum due to rounding.

Table 11.—Growing-stock removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Kansas, 1983

(Thousand cubic feet)

Unit and county	Red-cedar	Ponderosa pine	Total softwoods	Soft maple	Hard maple	River birch	Hickory	Pecan	Hackberry	Ash	Honey-locust	Black walnut
NORTHEAST UNIT												
Atchison	–	–	–	7	(1/)	–	–	–	–	–	–	6
Brown	–	–	–	–	–	–	–	–	–	–	–	–
Clay	–	–	–	–	–	–	–	–	–	(1/)	–	(1/)
Doniphan	–	–	–	–	–	–	–	–	–	–	–	3
Douglas	(1/)	(1/)	(1/)	(1/)	–	–	–	(1/)	(1/)	–	–	8
Franklin	1	(1/)	2	9	(1/)	–	(1/)	1	10	18	–	66
Geary	–	–	–	–	–	–	–	–	–	–	–	(1/)
Jefferson	–	–	–	–	–	–	–	–	2	–	–	6
Johnson	(1/)	–	(1/)	–	–	–	–	(1/)	–	2	1	46
Leavenworth	–	–	–	–	–	–	(1/)	–	–	–	–	15
Marshall	–	–	–	–	–	–	–	–	–	(1/)	–	(1/)
Nemaha	–	–	–	–	–	–	–	–	–	–	–	–
Osage	–	–	–	–	–	–	–	–	–	–	–	–
Pottawatomie	–	–	–	7	(1/)	–	(1/)	–	16	4	–	24
Riley	–	–	–	–	–	–	–	–	11	–	–	9
Shawnee	–	–	–	–	–	–	–	–	5	–	–	28
Total	2	(1/)	2	24	(1/)	–	(1/)	1	43	24	1	212
SOUTHEAST UNIT												
Allen	(1/)	–	(1/)	14	(1/)	–	–	–	15	18	–	22
Anderson	(1/)	–	(1/)	6	–	–	–	–	5	13	–	20
Bourbon	–	–	–	25	(1/)	–	–	–	11	23	–	22
Butler	–	–	–	4	–	–	–	–	21	9	–	5
Chase	–	–	–	–	–	–	–	–	–	–	–	–
Chautauqua	–	–	–	4	–	–	–	–	3	8	–	–
Cherokee	–	–	–	2	–	1	1	2	4	(1/)	–	1
Coffey	–	–	–	11	(1/)	–	–	–	8	10	–	3
Cowley	–	–	–	–	–	–	–	–	–	–	–	2
Crawford	–	–	–	9	(1/)	–	(1/)	–	9	18	–	22
Elk	1	–	1	2	–	–	–	–	6	9	–	1
Greenwood	–	–	–	4	–	–	–	–	7	10	–	–
Labette	–	–	–	(1/)	–	–	1	(1/)	(1/)	(1/)	–	(1/)
Linn	–	–	–	–	–	–	–	–	–	–	–	(1/)
Lyon	3	–	3	1	–	–	–	–	1	3	–	28
Marion	1	–	1	–	–	–	–	–	–	–	–	1
Montgomery	–	–	–	24	(1/)	–	–	–	21	26	–	–
Morris	–	–	–	–	–	–	–	–	–	–	–	–
Neosho	–	–	–	24	(1/)	–	–	–	26	32	–	43
Wilson	–	–	–	25	(1/)	–	–	–	36	29	–	38
Woodson	–	–	–	2	–	–	–	–	11	6	–	19
Total	5	–	5	156	1	1	2	2	187	202	–	224
WEST UNIT												
Barber	4	–	4	–	–	–	–	–	–	–	–	–
Cloud	–	–	–	–	–	–	–	–	(1/)	–	–	(1/)
Harvey	(1/)	–	(1/)	(1/)	–	–	–	–	–	–	–	(1/)
Mitchell	–	–	–	–	–	–	–	–	(1/)	–	–	(1/)
Norton	–	–	–	–	–	–	–	–	–	–	–	–
Ottawa	1	–	1	–	–	–	–	–	(1/)	1	(1/)	(1/)
Total	5	–	5	(1/)	–	–	–	–	1	1	(1/)	1
State total	12	(1/)	12	182	1	1	2	3	231	227	1	437

(Table 11 continued on next page)

(Table 11 continued)

Unit and county	Osage-orange	Syca-more	Cotton-wood	Black cherry	Red oak group	White oak group	Black locust	Bass-wood	Elm	Other hard-woods	Total hard-woods	All species
NORTHEAST UNIT												
Atchison	–	–	32	–	–	–	–	–	–	–	45	45
Brown	–	–	9	–	2	2	–	10	–	–	22	22
Clay	–	–	–	–	–	–	–	–	–	–	(1/)	(1/)
Doniphan	–	–	–	–	1	–	–	–	–	–	4	4
Douglas	(1/)	–	(1/)	–	1	2	–	–	(1/)	(1/)	12	12
Franklin	–	2	34	1	14	29	1	8	(1/)	(1/)	194	196
Geary	–	–	–	–	–	1	–	–	–	–	1	1
Jefferson	–	–	8	–	1	12	–	–	–	–	31	31
Johnson	–	–	–	–	1	1	–	–	–	–	51	51
Leavenworth	–	–	–	–	5	11	–	–	–	–	31	31
Marshall	–	–	–	–	–	–	–	–	–	–	(1/)	(1/)
Nemaha	–	–	6	–	2	2	–	–	–	–	10	10
Osage	–	–	–	–	–	9	–	–	–	–	9	9
Pottawatomie	–	9	(1/)	–	–	20	(1/)	–	(1/)	(1/)	61	61
Riley	–	(1/)	1	–	–	(1/)	–	–	–	–	19	19
Shawnee	–	–	7	–	1	5	–	–	–	–	45	45
Total	(1/)	11	98	1	29	95	1	18	(1/)	(1/)	555	558
SOUTHEAST UNIT												
Allen	–	–	18	–	21	27	–	–	–	–	133	133
Anderson	–	–	33	(1/)	14	3	–	–	–	–	95	95
Bourbon	–	–	27	–	14	32	–	–	–	–	153	153
Butler	–	–	40	–	11	3	–	–	–	–	69	69
Chase	–	–	–	–	–	9	–	–	–	–	9	9
Chautauqua	–	–	–	–	4	1	–	–	2	(1/)	21	21
Cherokee	(1/)	2	30	–	13	2	–	–	–	–	57	57
Coffey	–	–	2	–	–	3	–	–	2	(1/)	40	40
Cowley	–	–	21	–	–	2	–	–	–	–	24	24
Crawford	(1/)	1	66	–	15	22	–	–	–	–	180	180
Elk	–	–	–	–	5	1	–	–	2	(1/)	27	28
Greenwood	–	–	–	–	4	1	–	–	2	(1/)	29	29
Labette	(1/)	(1/)	5	–	6	1	–	–	–	–	14	14
Linn	–	–	–	–	–	–	–	–	–	–	(1/)	(1/)
Lyon	–	2	12	–	2	16	–	10	1	(1/)	78	79
Marion	–	–	–	–	–	(1/)	–	–	–	–	1	2
Montgomery	–	–	–	–	4	3	–	–	4	1	84	84
Morris	–	–	–	–	–	25	–	–	–	–	25	25
Neosho	–	–	53	–	28	32	–	–	–	–	239	239
Wilson	–	–	45	–	27	44	–	–	2	(1/)	250	250
Woodson	–	–	27	–	6	16	–	–	–	–	89	89
Total	(1/)	6	379	(1/)	179	245	–	10	18	4	1,616	1,621
WEST UNIT												
Barber	–	–	–	–	–	–	–	–	–	–	–	4
Cloud	–	–	(1/)	–	(1/)	(1/)	–	–	–	–	(1/)	(1/)
Harvey	–	–	–	–	–	–	–	–	–	–	(1/)	(1/)
Mitchell	–	–	(1/)	–	(1/)	(1/)	–	–	–	–	(1/)	(1/)
Norton	–	–	1	–	–	–	–	–	–	–	1	1
Ottawa	–	–	–	–	–	2	–	–	–	(1/)	4	5
Total	–	–	1	–	(1/)	2	–	–	–	(1/)	6	11
State total	(1/)	17	478	1	208	342	1	28	18	4	2,177	2,190

1/ Less than 500 cubic feet.

Rows and columns may not sum due to rounding.

Table 12.—Sawtimber removals from timberland for industrial roundwood production by Forest Survey Unit, county, and species group, Kansas, 1993

(Thousand board feet) 1/

Unit and county	Red-cedar	Ponderosa pine	Total softwood	Soft maple	Hard maple	River birch	Hickory	Pecan	Hackberry	Ash	Honey-locust	Black walnut
NORTHEAST UNIT												
Atchison	–	–	–	41	(2/)	–	–	–	–	–	–	38
Brown	–	–	–	–	–	–	–	–	–	–	–	–
Clay	–	–	–	–	–	–	–	–	–	1	–	1
Doniphan	–	–	–	–	–	–	–	–	–	–	–	19
Douglas	(2/)	(2/)	(2/)	(2/)	–	–	–	(2/)	(2/)	–	–	51
Franklin	7	1	7	54	(2/)	–	(2/)	3	56	86	–	440
Geary	–	–	–	–	–	–	–	–	–	–	–	1
Jefferson	–	–	–	–	–	–	–	–	11	–	–	47
Johnson	(2/)	–	(2/)	–	–	–	–	(2/)	–	7	3	283
Leavenworth	–	–	–	–	–	–	(2/)	–	–	–	–	95
Marshall	–	–	–	–	–	–	–	–	–	1	–	1
Nemaha	–	–	–	–	–	–	–	–	–	–	–	–
Osage	–	–	–	–	–	–	–	–	–	–	–	–
Pottawatomie	–	–	–	42	(2/)	–	1	–	91	20	–	152
Riley	–	–	–	–	–	–	–	–	63	–	–	38
Shawnee	–	–	–	–	–	–	–	–	31	–	–	183
Total	7	1	8	137	(2/)	–	1	4	252	116	3	1,341
SOUTHEAST UNIT												
Allen	(2/)	–	(2/)	82	(2/)	–	–	–	66	77	–	138
Anderson	1	–	1	31	–	–	–	–	31	62	–	130
Bourbon	–	–	–	148	(2/)	–	–	–	81	108	–	138
Butler	–	–	–	25	–	–	–	–	125	29	–	19
Chase	–	–	–	–	–	–	–	–	–	–	–	–
Chautauqua	–	–	–	25	–	–	–	–	18	29	–	–
Cherokee	–	–	–	10	–	6	5	7	21	1	–	8
Coffey	–	–	–	66	(2/)	–	–	–	49	48	–	19
Cowley	–	–	–	–	–	–	–	–	–	–	–	10
Crawford	–	–	–	54	(2/)	–	2	–	44	79	–	144
Elk	7	–	7	12	–	–	–	–	49	29	–	6
Greenwood	–	–	–	25	–	–	–	–	43	48	–	–
Labette	–	–	–	1	–	–	4	1	1	1	–	1
Linn	–	–	–	–	–	–	–	–	–	–	–	(2/)
Lyon	13	–	13	6	–	–	–	–	6	15	–	169
Marion	4	–	4	–	–	–	–	–	–	–	–	7
Montgomery	–	–	–	140	(2/)	–	–	–	123	124	–	–
Morris	–	–	–	–	–	–	–	–	–	–	–	–
Neosho	–	–	–	140	(2/)	–	–	–	153	155	–	277
Wilson	–	–	–	148	(2/)	–	–	–	223	138	–	250
Woodson	–	–	–	12	–	–	–	–	61	29	–	122
Total	25	–	25	922	2	6	11	8	1,094	972	–	1,438
WEST UNIT												
Barber	20	–	20	–	–	–	–	–	–	–	–	–
Cloud	–	–	–	–	–	–	–	–	(2/)	–	–	(2/)
Harvey	1	–	1	(2/)	–	–	–	–	–	–	–	(2/)
Mitchell	–	–	–	–	–	–	–	–	(2/)	–	–	(2/)
Norton	–	–	–	–	–	–	–	–	–	–	–	–
Ottawa	3	–	3	–	–	–	–	–	2	3	1	2
Total	23	–	23	(2/)	–	–	–	–	3	3	1	4
State total	55	1	56	1,059	3	6	12	13	1,349	1,091	4	2,783

(Table 12 continued on next page)

(Table 12 continued)

Unit and county	Osage-orange	Sycamore	Cottonwood	Black cherry	Red oak group	White oak group	Black locust	Basswood	Elm	Other hardwoods	Total hardwoods	All species
NORTHEAST UNIT												
Atchison	–	–	187	–	–	–	–	–	–	–	266	266
Brown	–	–	51	–	8	8	–	50	–	–	118	118
Clay	–	–	–	–	–	–	–	–	–	–	2	2
Doniphan	–	–	–	–	3	–	–	–	–	–	22	22
Douglas	–	–	(2/)	–	4	8	–	–	(2/)	(2/)	66	66
Franklin	–	13	200	7	53	110	3	30	1	2	1,059	1,067
Geary	–	–	–	–	–	2	–	–	–	–	4	4
Jefferson	–	–	45	–	4	49	–	–	–	–	158	158
Johnson	–	–	–	–	4	5	–	–	–	–	313	313
Leavenworth	–	–	–	–	19	43	–	–	–	–	167	167
Marshall	–	–	–	–	–	–	–	–	–	–	3	3
Nemaha	–	–	36	–	8	8	–	–	–	–	53	53
Osage	–	–	–	–	–	35	–	–	–	–	35	35
Pottawatomie	–	51	3	–	–	78	1	–	1	(2/)	441	441
Riley	–	3	9	–	–	1	–	–	–	–	113	113
Shawnee	–	–	43	–	4	21	–	–	–	–	263	263
Total	–	66	574	7	109	366	4	81	3	2	3,068	3,076
SOUTHEAST UNIT												
Allen	–	–	108	–	81	103	–	–	–	–	677	677
Anderson	–	–	185	(2/)	55	13	–	–	–	–	517	518
Bourbon	–	–	156	–	54	123	–	–	–	–	790	790
Butler	–	–	234	–	43	12	–	–	–	–	486	486
Chase	–	–	–	–	–	35	–	–	–	–	35	35
Chautauqua	–	–	–	–	18	4	–	–	12	2	107	107
Cherokee	–	10	173	–	51	6	–	–	–	–	299	299
Coffey	–	–	14	–	–	8	–	–	12	2	218	218
Cowley	–	–	123	–	–	6	–	–	–	–	138	138
Crawford	–	8	389	–	67	84	–	–	–	–	861	861
Elk	–	–	–	–	21	4	–	–	12	2	138	143
Greenwood	–	–	–	–	18	4	–	–	12	2	149	149
Labette	–	1	29	–	25	2	–	–	–	–	69	69
Linn	–	–	–	–	–	–	–	–	–	–	(2/)	(2/)
Lyon	–	13	72	–	8	70	–	50	6	1	414	427
Marion	–	–	–	–	–	1	–	–	–	–	8	12
Montgomery	–	–	–	–	18	12	–	–	25	5	445	445
Morris	–	–	–	–	–	97	–	–	–	–	97	97
Neosho	–	–	312	–	108	123	–	–	–	–	1,270	1,270
Wilson	–	–	265	–	103	169	–	–	12	2	1,313	1,313
Woodson	–	–	156	–	33	62	–	–	–	–	475	475
Total	–	32	2,228	(2/)	689	936	–	50	93	17	8,505	8,530
WEST UNIT												
Barber	–	–	–	–	–	–	–	–	–	–	–	20
Cloud	–	–	1	–	(2/)	(2/)	–	–	–	–	2	2
Harvey	–	–	–	–	–	–	–	–	–	–	1	1
Mitchell	–	–	1	–	(2/)	(2/)	–	–	–	–	2	2
Norton	–	–	5	–	–	–	–	–	–	–	5	5
Ottawa	–	–	–	–	–	8	–	–	–	1	19	22
Total	–	–	6	–	1	9	–	–	–	1	29	52
State total	–	98	2,808	7	798	1,315	4	131	96	21	11,602	11,658

1/ International 1/4-inch rule.

2/ Less than 500 board feet.

Rows and columns may not sum due to rounding.

Table 13.—Residues produced at primary wood-using mills by type of material, type of use, and Forest Survey Unit, Kansas, 1993

(Thousand tons, green weight)

Survey Unit and	Wood residues						Bark	
	Total		Coarse 1/		Fine 2/			
type of use	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
NORTHEAST UNIT								
Industrial fuel-mill	–	4.24	–	2.68	–	1.56	–	1.14
Domestic fuel	0.01	1.97	0.01	1.97	–	0.00	(4/)	0.18
Miscellaneous 3/	(4/)	0.53	–	0.03	(4/)	0.50	–	0.21
Not used	(4/)	1.51	(4/)	0.52	(4/)	0.99	(4/)	0.66
Total	0.01	8.24	0.01	5.20	0.01	3.05	(4/)	2.20
SOUTHEAST UNIT								
Fiber products	–	7.93	–	7.93	–	–	–	–
Industrial fuel-mill	(4/)	0.01	(4/)	0.01	–	–	(4/)	0.01
Industrial fuel-sold	–	0.46	–	–	–	0.46	–	0.34
Domestic fuel	0.03	4.15	0.03	3.69	–	0.46	0.01	1.52
Miscellaneous 3/	0.02	5.72	(4/)	0.01	0.02	5.70	(4/)	3.08
Not used	–	0.24	–	0.06	–	0.18	–	0.02
Total	0.06	18.52	0.04	11.71	0.02	6.81	0.01	4.97
WEST UNIT								
Domestic fuel	0.03	0.06	0.03	0.04	(4/)	0.02	0.01	0.02
Miscellaneous 3/	0.02	(4/)	–	–	0.02	(4/)	–	–
Not used	(4/)	0.01	(4/)	(4/)	(4/)	(4/)	(4/)	(4/)
Total	0.05	0.08	0.03	0.05	0.02	0.03	0.01	0.02
STATE TOTAL								
Fiber products	–	7.93	–	7.93	–	–	–	–
Industrial fuel-mill	(4/)	4.25	(4/)	2.69	–	1.56	(4/)	1.15
Industrial fuel-sold	–	0.46	–	–	–	0.46	–	0.34
Domestic fuel	0.08	6.18	0.07	5.70	(4/)	0.48	0.02	1.73
Miscellaneous 3/	0.04	6.25	(4/)	0.05	0.04	6.20	(4/)	3.29
Not used	(4/)	1.76	(4/)	0.58	(4/)	1.17	(4/)	0.68
Total	0.12	26.84	0.08	16.96	0.05	9.87	0.02	7.19

1/ Suitable for chipping such as slabs, edgings, veneer cores, etc.

2/ Not suitable for chipping such as sawdust, veneer clippings, etc.

3/ Livestock bedding, mulch, small dimension, and specialty items.

4/ Less than 10 tons, green weight.

Rows and columns may not sum due to rounding.

Hackett, Ronald L.; Strickler, John K.
1996. **Kansas timber industry—an assessment of timber product output and use, 1993.** Resour. Bull. NC-176. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 35 p.

Reports findings of a survey of all primary wood-using mills in Kansas in 1993 and compares those findings with earlier surveys. Reports production and receipts of industrial roundwood by product, species, and county. Also reports the quantity, type, and disposition of wood and bark residues generated by Kansas's primary wood-using industry.

KEY WORDS: Bark, mill, production, roundwood, residues, saw logs, veneer logs.

Our job at the North Central Forest Experiment Station is discovering and creating new knowledge and technology in the field of natural resources and conveying this information to the people who can use it. As a new generation of forests emerges in our region, managers are confronted with two unique challenges: (1) Dealing with the great diversity in composition, quality, and ownership of the forests, and (2) Reconciling the conflicting demands of the people who use them. Helping the forest manager meet these challenges while protecting the environment is what research at North Central is all about.

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